Abstract

A gas turbine has a plurality of combustors in a toroidal arrangement to provide combustion gases to turbine blades, thereby rotating the turbine body. Thermocouples, the number of which is the same as or greater than the number of the combustors, are arranged toroidally at the outlets of the turbine blades and measure the temperatures of the combustion gases at the respective outlets. During the operation of the gas turbine, if an abnormality, such as misfire or fuel injection nozzle obstruction, occurs in one or more of the combustors, the resulting change in gas temperature triggers a signal to stop, and thereby protect the gas turbine. Based on the measured values of the blade pass temperatures of the thermocouples and set threshold temperatures, a fuel supply system may be caused to gradually decrease the fuel supplied to the combustors to bring the gas turbine body to an automatic stop, or it may be cut off instantaneously, thus immediately stopping the gas turbine.